Journal of Public Health and Diseases
Volume 6(2), pages 21-30, December 2023
Article Number: CB765A861
ISSN: 2705-2214
https://doi.org/10.31248/JPHD2023.132
https://integrityresjournals.org/journal/JPHD

Full Length Research

Perception and utilization of partograph among midwives across selected health care facilities in Abuja metropolis, Abuja: A comparative study

Sample Daughter[1], Joseph, Jonathan Gimba[2]*, Ishaku, Longman Toroh[2], Ashim, Lois Kasham[2], Labesa, Vera[2] and Zango, Abigail Zidyep[2]

[1]Examiation Unit, Nursing and Midwifery Council of Nigeria, Abuja, Nigeria
[2]Kaduna State College of Nursing and Midwifery, Kafanchan, Nigeria.

*Corresponding author. Email: joemendels@gmail.com

Received 15th October 2023; Accepted 20th November 2023

ABSTRACT: Currently, countries are uniting behind a new target to accelerate the decline of maternal mortality rate (MMR) by 2030. SDG 3 encompasses this target of reducing the global MMR to less than 70 per 100 000 births, with no country having MMR more than twice global average. One of the key requirements for averting MMR is provision of care by skilled birth attendant especially midwives, using and having positive perspective to such a tool as partograph, before, during and after childbirth. Hence, the present study. Stratified sampling was used in selecting facilities. Respondents who met the inclusion criteria were drawn proportionately using simple random sampling. Data was collected using a semi-structured questionnaire. Data entry was done using statistical package for social sciences (SPSS V. 21) while hypotheses testing was done using chi-square and ANOVA at statistically significant level of 0.05. Study variables were scored. Score >3.0 was classified positive perception and <3.0 otherwise while score ≥70% was considered adequate utilization and <70% was considered otherwise. Findings showed age of respondents ranged from 39 - 59 years (38 ± 9.8). Two in every five of the respondents had 1 - 5 years of nursing job experience. Respondents had positive perception about partograph (mean 3.7(0.3)) yet inadequate (mean score 55.6%) utilization of the tool. Perception of partograph was significantly positive among respondents from primary facility (ANOVA = 12.38, p = < 0.001) compared to respondents from secondary and tertiary facilities which translated to adequate utilization (χ^2 = 68.08, df = 2, p = <0.001) of partograph at that level of health care delivery. The study showed that perception and utilization of partograph in the primary health facility was more than in the secondary and tertiary facilities.

Keywords: Health care levels, partograph, midwives, perception, utilization.

INTRODUCTION

For over 3 decades now, maternal and infant mortality reduction have been a goal of many international and national welfare programs. In the context of the Sustainable Development Goals (SDG), countries have united behind a new target to accelerate the decline of maternal mortality by 2030. SDG 3 includes an ambitious target: “reducing the global MMR to less than 70 per 100 000 births, with no country having a maternal mortality rate of more than twice the global average” (WHO, 2023). Improving maternal health is one of World Health Organisation’s key priorities. WHO works to contribute to the reduction of maternal mortality by increasing research evidence, providing evidence-based clinical and programmatic guidance, setting global standards, and providing technical support to member states on developing and implementing effective policy and programmes (WHO, 2015). According to World Health Organization, one of the key important requirements for

averting MMR is the provision of care by a skilled birth attendant especially midwives, using such a tool as partograph, before, during and after childbirth (Mukisa *et al*., 2019). Skilled birth attendant care needs to be available across all levels of the health system in order to reduce the delays for a referral to a higher care level if problems are expected to arise or do arise during labour ((Mukisa *et al.,* 2019). The partograph was therefore recommended for use across all maternity health facilities by the WHO (Agan *et al*., 2014). This was further suported by international guideline for skilled birth attendance who recommends plotting partograph for all deliveries (labour and birth process) so that women with problems in labour can be identified early and referred to higher centres for appropriate care (Singh *et al*., 2017).

The partograph is a very useful graphical record of the course of labor that yields optimum results when employed in labor management by Skilled Birth Attendants (SBA). It is a simple, effective, and affordable single paper sheet which has quality-of-care benefits that go beyond effective labour monitoring and management, including increased interaction between health care providers, improved continuity of care and the condition of women (Kushwah *et al*., 2013; Kenchaveeriah *et al*., 2011 cited in Ayenew and Zewudu, 2020). As an obstetric tool, its usefulness and efficiency cut across resource-poor and developed nations. Evidence abounds that the acquisition of knowledge of its use and having a positive perception that translate to its utilization in monitoring labor would culminate in a remarkable reduction in the incidence and outcomes of prolonged and obstructed labor, which are reported to be associated with 8-10% of maternal deaths (Asibong *et al.,* 2014). From the foregoing, therefore, quality midwifery care is considered incomplete without the application and use of partograph in monitoring labor across levels of health facilities.

Although, partograph use among SBA has been viewed as very helpful to avoid the maternal and neonatal complications related to prolonged and obstructed labor; its general adoption as a labor monitoring tool among midwives is not without inappropriate perceptions, especially in low and middle-income countries (Ayenew and Zewudu, 2020). Partograph is still not widely used in the developing parts of Africa, despite recommendations for its use when monitoring all labor (Kushwah *et al*., 2013). In many countries where it has been mandated without proper training, it serves only as a record of labor and not as a tool to guide decision-making during labor (Yisma *et al.,* 2013). In other studies, some of the perceptions influencing the utilization of partograph include skilled birth attendants' feeling that completing the partograph is an additional time-consuming task (Regasa *et al*., 2018), the relative lack of conviction on the side of policymakers, about the usefulness of the partograph as a critical clinical decision-making tool (Singh *et al*., 2017), the existence of different varieties and updated versions of the partograph, leaving the potential new user dismayed as to which conflicting guidelines to follow (Bedwell *et al.*, 2017), shortage of midwife staff as the few on duty is faced with so many responsibilities on a shift (Kitila *et al*., 2014), the relative lack of technical competence in the use of partograph among skilled birth attendants (Sama *et al.,* 2017), and poor appreciation of its advantages in preventing obstructed labor. However, most of these studies were restricted to rural health facilities, with few highly skilled healthcare personnel which might have biased partograph use estimates and overlooked health worker perceptions of partograph utilization across all level of health care facilities. It is against this backdrop the present study is premised which is aimed at assessing the perception and utilization of partograph among midwives as well as ascertain if there is difference in the perception and utilization of the tool among the respondents across the three selected health care levels in Abuja Metropolis, Nigeria. This is critical as having appropriate perception and making use of this simple tool by midwives across all levels of care, will be an important step for designing appropriate intervention strategies that would encompass training, retraining, and continuous professional educational programs tailored towards improving their disposition in the use of partograph for safe motherhood practices.

MATERIALS AND METHODS

Study design

The study adopted a descriptive research design in gathering information on the perception and utilization of partograph among midwives across the three levels of health care facilities in Abuja metropolis. This design is useful when wanting to describe and examine relationships and determine causality among variables (Grove *et al*., 2013) through the analysis of data collected at one specific snap-shot point in time (Polit and Beck, 2012).

Setting

The present study was carried out in Abuja metropolis. It is the capital of Nigeria. It lies in the middle of Nigeria, within the federal capital territory. It is located on few kilometres from the Abuja-Kaduna expressway and is bordered by Nasarawa State on the east, Kaduna State on the north, Niger State on the west, and Kogi State on the south. Abuja metropolis has five districts which include the Central Area District, Wuse District, Maitama District, Gariki District and Asokoto District. It lies on coordinates 9°4'N and 7°29'E. Its metropolitan centre covers a land mass of 713 square kilometres (Mapcarta Software, version 2017, Encarta Inc., Chicago, IL, USA). Based on 2016 census estimates, it has a total population of six

million (6,000,000) individuals. Abuja houses numerous public and private hospitals. The public hospitals include the National Hospital Abuja (Tertiary), Gwarinpa General Hospital Abuja (Secondary), and Nyanya Comprehensive Health Centre (Primary) and they are the selected facilities for the present study.

The National Hospital Abuja is located at number 265 Independence Avenue within the Central Business District, Abuja. It is an 850-bed capacity referral centre. The hospital has a total staff of 1,674 out of which are 193 Midwives who man, in addition to other categories of SBA, maternity section consisting of Labour ward, Lying ward, Gynae ward, and the antenatal ward. The hospital runs three (3) shifts (morning, afternoon and night).

The Gwarinpa General Hospital Abuja is situated at Tufashiya Crescent Life Camp Gwarinpa in Abuja metropolis. It is a 98-bed capacity health care facility. The hospital has 1339 staff strength from which are 116 midwives who work in the maternity section of the hospital consisting of the antenatal, labour, lying in, postnatal, gynea wards, MVA room and the antenatal clinic.

Nyanya Comprehensive Health Centre**,** located in the Gida-mangoro Area of the Federal Capital Territory Abuja, is a 36-bed capacity health care facility that has 98 midwives who provide midwifery services.

Sampling

The study population included registered, licensed and practicing midwives, nurse-midwives contracted to serve in the selected tertiary, secondary and primary health facilities within Abuja metropolis who provide skilled birth attendance.

A sample size of 221 from a target population of 407 midwives (National Hospital: 193; Gwarinpa General Hospital: 116; Nyanya Comprehensive Health Centre: 98) was used for the study (Table 1). The sample size was calculated using an online survey software developed by Creative Research System (2012) which adopts the Cochran sample size formula for cross-sectional studies as follow:

$\mathrm{n} = \frac{Z^2 pq}{d^2}$ for population above 10,000

Where n = minimum sample size; Z = confidence level of 95% (Standard value of 1,96); p = prevalence proportion which is taken as 50% (0.5); q = 1 – p; d = degree of accuracy desired (0.05). q = 1 – p, q = 0.5, d = degree of accuracy desired (0.05), n = 384

Since the study population is less than 10,000, then

$$\mathrm{nf} = \frac{n}{1 + (\frac{n}{N})}$$

Where nf = calculated sample size when the population is < 10,000; N = desired sample when population is > 10,000

Therefore, $\mathrm{nf} = \frac{384}{1+(\frac{384}{407})}$ = 198

Final determined sample size after controlling for potential 10% attrition = 198/(1-0.1) = **221**

Stratified sampling technique was used for the study. The hospital facilities were used to form the strata, then proportionate samples were randomly selected from each stratum to represent the population of study using the following formula:

$$\mathrm{R} = \frac{\mathrm{Ns} \times \mathrm{n}}{\mathrm{N}}$$

Where: n = total sample size; Ns = number of midwives in a selected facility; N = total number of midwives from all the selected facilities and R = require sample size.

The respondents were further selected using stratified sampling according to their cadre. However, midwives who do not provide skilled birth attendance in selected health facilities were excluded from participating in the study.

Data collection

A semi-structured questionnaire adapted from Sama *et al.* (2017) consisting of closed and open-ended questions was used for data collection. Adaptations were made to three sections of the questionnaire: demographic characteristics, perceptions about utilization of partograph in labor monitoring and utilization of partograph. These adaptations were made to some items in these three sections of the original five-sector questionnaire to fit the local context of the study. All items on the questionnaire were in English language. Distribution of questionnaires was done by six (6) trained research assistants on daily basis covering the three shifts for a period of 18 days (6 days dedicated to each of the three selected health facilities) for data collection.

For face validity, appropriate font size, character, organization and sequence or arrangement of items on the questionnaire was ensured while the content Validity Index for the questionnaire was calculated as advocated by Polit and Beck (2012) using the questionnaire test items scores from five experts in the field of midwifery.

For reliabilty of the questionnaire, a pilot test of 20 registered and practicing midwives in University of Abuja Teaching Hospital Abuja (Former Gwagwalada Specialist hospital, Abuja) was done, data obtained was subjected to Cronbach alpha statistics to calculate the average internal consistency of all possible splits-halves for the instrument. A reliability index of 0.75 was obtained, depicting good reliability of the adapted instrument for data collection (Polit and Beck, 2012).

Data analysis

Out of 221 administered questionnaires, 178 (80.5%

Table 1. Sampling table.

No.	Facility	Number of midwives	Working Proportion	Sample
1.	National Hospital Abuja	193	(193/407) x 222	105
2.	Gwarinpa General Hospital Abuja	116	(116/407) x 222	63
3.	Nyanya Comprehensive Health Centre Abuja	98	(98/407) x 222	53
	Total	407		221

response rate) were returned and thus included for the final analysis using Statistical Package for Social Sciences (SPSS) version 21.0. Specifically, generated data were subjected to descriptive statistics (mean, standard deviation, frequency, and percentages) and inferential statistics (Chi square) for hypothesis testing at level of significance $p < 0.05$.

In assessing the objectives of the study, perception of respondents on partograph utilization was scored on Likert scale as deemed appropriate: Thus, for positively worded statements (SA – SD) were scored 5 - 1, while negatively worded statements SA – SD will be scored 1 - 5. The cumulative participants' scores were calculated, mean or median scores were reported as deemed appropriate. The scores were further categorized using the mean acceptable point of 3.0. Therefore, scores <3.0 were classified as negative perception, while score >3.0 were classified as positive perception. In assessing utilization of partograph among respondents, utilization scores were graded as adequate (mean score ≥ 70%) and inadequate (mean score < 70%).

In testing hypotheses inferential statistics was used. For the first hypothesis, the perception of partograph scores were compared for difference across selected tertiary, secondary and primary health facilities using ANOVA statistics at $p < 0.05$ while for the second hypothesis, the utilization of partograph across the selected tertiary, secondary and primary health care facility was compared using Chi square test of association at $p < 0.05$.

Ethical consideration

For ethical clearance, an application letter and a letter of identification from the Head of Department, Department of Nursing, University of Ibadan was sent to the Ethical Committees of National Hospital Abuja (Approval No.: NHA/EC/061/2020) and the Federal Capital Territory Administration (FCTA) (Approval No.: FHREC/2020/01/74/10-08-20). Attached to the letter was a copy of the proposal for the research study. Administrative permission was obtained from the authorities of the selected hospitals before accessing the target respondents. Informed consent was obtained from each of the respondents after proper explanation of the purpose of the study before they were given questionnaire.

RESULTS

All of the 221 respondents accepted to participate in the study. Out of the 221 questionnaires administered, 178 questionnaires (80.5% response rate) were returned completely filled and were thus included for the final analysis. Therefore, 178 respondents are included in this study.

Table 2 summarized the background socio-demographic characteristics of the respondents and showed that 100(56.2%) of the respondents were from National Hospital Abuja. They had a mean age of 37.7(9.8) years old as majority (62; 34.8%) of the respondents were aged between 30 and 39 years old. Most (164; 92.1%) of the respondents were females who were married (135; 75.8%) and were of the Christian religious sect (136; 76.4%). Most (125, 70.2%) of the respondents had diploma level nursing education. The majority (100; 56.2%) practiced in a tertiary health facility and was exposed to post qualification training on partograph use (103; 57.9%). They had a mean nursing experience of 7.5(5.5) years and two in every five of the respondents had 1-5 years of nursing job experience.

Table 3 presented perceptions about the partograph and revealed that the respondents generally had positive perception about the partograph (mean 3.7±0.3). They had positive perception (item mean > 3.0) in 11 out of 13 items concerning perception about partograph. They had negative perceptions on how cumbersome using the partograph is (mean 2.3±1.6) and excessive work-load as a barrier to partograph use (mean 2.9±1.7). Overall, the midwives had positive perception 127(71.3%) to partograph.

Table 4 showed that the utilization of partograph among the respondents was inadequate (mean score 55.6%). They scored below 70% in 5 out of 7 items relating to partograph utilization. About half (90; 50.6%) of the respondents had a final score less than the 70% cut off mark. They had their lowest score (16.3%) on the item concerning what action to take when the labour plot on the partograph falls on the alert line, as most (149; 83.7%) of the respondents wrongly responded "Refer to physician". In contrast, they had their highest score on the item concerning who documents the partograph, as all (100%) correctly responded "the nurse-midwife". Contrary to the WHO design of the partograph, the respondents reported

Table 2. Socio-demographic profile of respondents (**n = 178).**

Paramters	Variable	f	%
Hospital name	Nyanya Comprehensive Health Centre Abuja	48	27.0
	General Hospital Abuja	30	16.9
	National Hospital Abuja	100	56.2
Age	20-29 years	41	23.0
	30-39 years	62	34.8
	40-49 years	46	25.8
	50-59 years	29	26.3
	Mean (SD)	37.7±9.8	
Gender/Sex	Male	14	7.9
	Female	164	92.1
Marital status	Single	43	24.2
	Married	135	75.8
Religion	Islam	42	23.6
	Christianity	136	76.4
Highest educational qualification	Diploma (Basic/Post basic Nursing)	125	70.2
	Bachelors (B.Sc/BNSc)	22	12.4
	Masters (M.Sc/MSN/MNsc)	24	13.5
	Doctorate (PhD)	7	3.9
Type of hospital facility	Primary	48	27.0
	Secondary	30	16.9
	Tertiary	100	56.2
Years of nursing experience	1-5 years	74	41.6
	6-10 years	70	39.3
	11-15 years	27	15.2
	21-25 years	7	3.9
	Mean (SD	7.4±5.5	
Post qualification training on partograph use	No	75	42.1
	Yes	103	57.9

Key: f = frequency, % = percentage, SD = Standard deviation.

that they do not routinely use the partograph (90; 50.6%), commence plotting on the partograph when cervical dilatation is at 6-10 cm (57; 32.0%), refer to physician when labor plot falls on alert line (149; 83.7%) but call a senior midwife when labor plot is on action line (133; 74.7%). This further supports the results of Research Question 1 demonstrating that “the respondents do not understand what a normal partograph labour plot should look like”.

Table 5 tested the difference in perception about partograph between the types of health facility, and it revealed a significant difference in the variables. Perception about partograph was significantly positive among respondents from the primary facility compared to respondents from the secondary and tertiary facilities (ANOVA = 12.38, p = < 0.001).

Table 6 tested the association between type of health facility and utilization of partograph, and it affirmed significant association between the variables (χ^2 = 68.08, df = 2, p = <0.001). The association was estimated to be of moderate strength and significant in about 62% of occurrences (Cramer’s V effect size φ = 0.62). Respondents practicing in the primary facility were more likely to utilize the partograph compared to those in the secondary and tertiary facilities (p = <0.001).

Table 3. Perception about the partograph (n = 178).

Statement items	SA (1)	A (2)	U (3)	D (4)	SD (5)	Mean (SD)
Perceived Benefits of Partograph Use						
can detect problems early in labour	157	21	-	-	-	4.9(0.3)†
It is very cumbersome	93	28		29	28	2.3(1.6)
Midwives can work without it	17	48	27	43	43	3.3(1.3)
Easier to detect problems	55	63	33	23	4	3.8(1.1)†
Helps health team's decision making	118	57	-	3	-	4.6(0.6)†
Perceived Self efficacy on Partograph Use						
I am not skilled in partograph use	5	36	7	39	91	4.0(1.3)
I am competent in partograph use	66	47	32	27	6	3.8(1.2)†
I can train others on partograph	47	74	31	17	9	3.8(1.1)†
I have lost expertise in partograph use	7	27	31	42	71	3.8(1.2)
Perceived Barriers to Partograph Use						
non-availability of partograph sheets, lack of trainings on partograph, lack of policy on partograph commitment non-availability of partograph sheets, lack of trainings on partograph, lack of policy on partograph Commitment Unavailability of partograph sheets hinders using it	85	63	6	6	18	4.07(1.2)†
Excessive workload and midwives' shortage limits partograph use	48	36	14	15	65	2.9(1.7)†
Lack of training and retraining of midwives contribute greatly to non-use of partograph	64	60	18	7	29	3.7(1.4)†
Monitoring labour with partograph is a cumbersome exercise	63	33	16	24	42	3.3(1.6)†
Mean perception						**3.7(0.3)**
Positive perception	127(71.3%)					
Negative perception	51(28.7%)					

Key: † flags items scored in reverse, f = frequency, % = percentage.
Decision rule: mean ≤3.0 = negative, >3.0 = positive perception.

Table 4. Utilization of partograph (n = 178).

Item	Options	F	Score (%)
Do you use the partograph routinely for monitoring labour?	No	90	
	Yes	88*	49.4
How often do you use the partograph for monitoring and documentation of labour	At every other labor	90	
	At every labor	88*	49.4
At what point of dilatation do you commence plotting the partograph?	6-10cm	57	
	4cm	121*	68.0
Who documents on the partograph	Nurse-midwife	178*	100
What types of patients do you use the partograph for?	Prolonged labor	34	
	All labor onset	144*	80.9
What action do you take when plot is on the action line?	Call a senior midwife	133	
	Refer to physician	45*	25.3

Table 4. Cotd.

What action do you take when plot is on the alert line?	Refer to physician	149	
	Call a senior midwife	29*	16.3
Summary			
Mean score			**55.6**
Proportion with inadequate utilization		90	50.6
Proportion with adequate utilization		88	49.4

Key: * flags desired responses, f = frequency, % = percentage.
Decision rule: mean score ≥70% = adequate, <70% = inadequate utilization.

Table 5. Perception about partograph across Hospital type (**n = 178).**

Variable	Perception [Mean (SD)]	Between groups	Within groups	F	P
Hospital type					
Primary	3.9(0.3)				
Secondary	3.6(0.2)			12.38	<0.001
Tertiary	3.6(0.3)				
Df		2	175		
SS		2.19	15.50		
MS		1.10	0.09		

Key: df = degree of freedom, SS = sum of squares, MS = Mean square, F = ANOVA, p = p-value.
Decision rule: p < 0.05 = significant, > 0.05 = not significant.

Table 6. Association between Hospital type and utilization of partograph (n = 178).

Hospital type	Utilization of partograph		df	χ^2	Φ	P
	Inadequate (f)	Adequate (f)				
Primary	-	48				
Secondary	23	7	2	68.08	0.62	<0.001
Tertiary	67	33				

Key: f = frequency, df = degree of freedom, χ^2 = chi square, φ = Cramer's V, p = p-value.
Decision rule: p < 0.05 = significant, > 0.05 = not significant; φ > 0.5 = moderate, > 0.7 = strong.

DISCUSSION

This study comparatively assessed the perception and utilization of partograph among midwives in selected health facilities from the three health care levels in Abuja Metropolis, North Central, Nigeria.

The socio-demographic characteristics of the respondents from this study showed that 100(56.2%) of the respondents were from National Hospital Abuja. The mean age of the respondents were 37.7 ± 9.8 years as majority (62; 34.8%) of the respondents were aged between 30 and 39 years. Also, most (164; 92.1%) of the respondents were females who were married and were Christians. Most of the respondents had diploma level nursing education. The majority practiced in a tertiary health facility and was exposed to post qualification training on partograph use. Respondents had a mean nursing experience of 7.5 ± 5.5 years and two in every five of the respondents had 1-5 years of nursing job experience. It can be inferred from this study that nursing is set to be a female domineering profession and workforce of nurses are within 30-39 years in many Nigerian hospitals. This finding is similar to a study carried out by Ingwu *et al*. (2018) in Enugu, Nigeria were majority of their respondents were within age bracket of 30-39. Also, majority of the respondents were female and majority of their respondents had 2-3 years working experience. Furthermore, Hagos *et al*. (2020) showed similarity in findings among midwives in Addis Ababa, Ethiopia where, it was reported that majority of the midwives were females 443(74.6%). Also, the mean age of midwives was 25 years with a standard deviation of 0.8. Three fourth of the obstetric ward working midwives had

less than 5 years of service. A study in Cameroon among midwives also corroborate the finding from this study. The findings showed that the mean age of the respondents was 37.9±10.0 years with majority being female 85.9% (Sama *et al*., 2017).

Findings on perceptions about the partograph revealed that the respondents generally had positive perception about the partograph (mean 3.7(0.3)) in 11 out of 13 items concerning perception about partograph. They however, had negative perceptions on how cumbersome using the partograph is (mean 2.3(1.6)) and identified excessive work-load as a barrier to partograph use (mean 2.9(1.7). This finding is in consonance with findings from the study of Zelellw and Tegegne (2018), where less than half of care providers were not following WHO recommended standards for maternal and foetal conditions, such as moulding (19/43), maternal pulse (10/43), maternal blood pressure (13/43), maternal temperature (6/43) and urine volume, urine protein and urine ketone (1/43). This is supported by qualitative data showing that shortage of staff, lack of awareness, lack of skill and competency, knowledge gaps, lack of commitment, negligence and misunderstanding were the main reasons that participants were not using the partograph routinely. Another study by Andersson *et al.* (2012) and Dangal (2017) showed that prolonged labour, augmented labour, operative interventions, neonatal morbidity and intrapartum fetal deaths were reduced with the use of the partograph. This is also supported by qualitative data as informants indicated that the partograph was not used properly according to WHO standards. This is comparable to studies conducted in Kenya (Qureshi *et al.,* 2011) and Nigeria (Opiah *et al*, 2012), which showed that the partograph was used below the standard recommended. This therefore stresses the need to encourage consolidated efforts to bypass the barriers mitigating against the proper use of partograph by engaging with nurses at all levels of the healthcare system.

More so, the utilization of partograph among the respondents was inadequate (mean score 55.6%). This further supports the results of research question 1 demonstrating that “the respondents do not understand what a normal partograph labour plot should look like”. The findings from this study are in consonance with the level of utilization in other countries stated as follows: Addis Ababa (57%) (Yisma *et al*, 2013); Benin (98%) (Azandegbe *et al*., 2014); and South Africa (64%) (Mathibe-Neke *et al.,* 2013). However, it is in disagreement with findings from other countries and regions such as Ethiopian hospitals (13%) (Getachew *et al.,* 2011); the Amhara region (29%) (Abebe *et al.,* 2013); Uganda (30%) (Ogwang *et al.,* 2009) and Nigeria (8.4%), (32.3%) and (9.8%) (Fawole *et al*., 2008; Oladapo *et al*., 2006; Fawole *et al*., 2010, respectively). This provides an underpinning for promotion of utilization of partograph among midwives in the three level of health care delivery in Nigeria by promulgating policies that will encourage correct and adequate partograph use among pregnant women.

With regards to perception of partograph across facilities, perception about partograph was significantly positive among respondents from the primary facility compared to respondents from the secondary and tertiary facilities (ANOVA = 12.38, $p = < 0.001$). This finding is supported by a similar finding in a qualitative study by Mukisa *et al.* (2019) on level of partograph completion and healthcare workers’ perspectives on its use in Mulago National Referral and Teaching Hospital, Kampala, Uganda where nurses and midwives in the referral hospital where shown to have positive perception compared to their counterparts in teaching hospital as they indicated that filling of partograph lessens the work of writing lots of details. However, eight themes were identified as negative perspectives to utilization in the study. They included the unavailability of the partographs, staffing levels and motivation, multitasking required, congestion in the ward, different skill sets and competencies, inadequate monitoring equipment, availability of other methods of monitoring, and status of the referred mother at the time of contact with the health worker.

On utilization of partograph across selected facilities, results from the study showed that there was more adequate utilization of the partograph in the primary health facility than in the secondary and tertiary facilities. The utilization of partograph was most inadequate in the secondary health facility. This is in congruence with the study done in Ogun State, Nigeria, where the tool was not uniformly utilized in the settings where it was most needed (at secondary health hospitals and private health institutions) (Oladapo *et al*., 2012; Opiah *et al.*, 2012). This may be due to the fact that at health centres, more obstetric care givers use the partograph regularly to identify abnormal labour patterns early and arrange for the timely referral to higher centres though what is required is that all health facilities, whether hospitals or health centres, should regularly use the partograph to monitor progress of labor. It is therefore imperative that greater attention should be given to the use of this simple tool in labor monitoring according to WHO recommendation so that the majority of complications and deaths that occur during childbirth in Nigeria would be reduced leading to improvement in maternal and child morbidity and mortality situation in the country (WHO, 2014).

Conclusion

This study revealed that the respondents generally had positive perception about the partograph but inadequate utilization of partograph in selected primary, secondary and tertiary health care centres in Abuja Metropolis. This means that the positive perception among respondents could not be translated to adequate, effective and recommended standard of partograph utilization. The finding also indicated perception about partograph was

significantly positive among respondents from the primary facility compared to respondents from the secondary and tertiary facilities which translated to respondents practicing in the primary facility being more likely to utilize the partograph compared to those in the secondary and tertiary facilities.

Recommendations

The perspectives and inclination to use the partograph should be reinforced through periodic continuous medical education by way of unit presentations, seminars, and workshops especially at the secondary and tertiary health facilities. More so, further research in this regard should have more focus on SBAs in the secondary and tertiary health facilities with the view of unravelling the negative perspectives to partograph and ways of improving on them.

CONFLICT OF INTEREST

The authors declare no conflict of interest of any nature.

ACKNOWLEDGEMENT

Health Research Ethics Committee of National Hospital Abuja and the Federal Capital Territory Administration (FCTA) are hereby appreciated for their timely review and approval of this study. Also Prof. Prisca Adejumo of Department of Nursing Science, University of Ibadan, Nigeria, for her guidance.

REFERENCES

Andersson, S., Sundberg, T., Johansson, E., & Falkenberg, T. (2012). Patients' experiences and perceptions of integrative care for back and neck pain. *Alternative Therapies in Health and Medicine, 18*(3), 25-32.

Asibong, U., Okokon, I. B., Agan, T. U., Oku, A., Opiah, M., & Essien, E. J. (2014). *International Journal of Women's Health, 6*, 873-880.

Ayenew, A. A., & Zewudu, B.F. (2020). Estimating partograph utilization and associated factors among health care professionals in Ethiopia: A systematic review and Meta – analysis. *Annals of Clinical and Laboratory Research,* 8(3), Article number 317.

Azandegbe, N., Testa, J., & Makoutode, M. (2014). Assessment of partogram utilization in Benin. *Sante,* 14, 251-255

Bedwell, C., Levin, K., Pett, C., & Lavender, D. (2017). A Realist Review of the Partograph: when and how does it work for labour monitoring? *BMC Pregnancy and Childbirth*; *17*, Article number 31.

Creative Research System (2012). Sample size calculator. Retrieved 11th April 2014 from https://www.surveysystem. com/sscalc.htm.

Dangal, G. (2006). Preventing prolonged labor by using partograph. *The Internet Journal of Gynecology and Obstetrics*, *7*(1), 1-4.

Fawole, A. O., Hunyinbo, K. I., & Adekanle, D. A. (2008). Knowledge and utilization of the partograph among obstetric care givers in south west Nigeria. *African Journal of Reproductive Health*, *12*(1), 22-29.

Fawole, A. O., Adekanle, D. A., & Hunyinbo, K. I. (2010). Utilization of the partograph in primary health care facilities in southwestern Nigeria. *Nigerian Journal of Clinical Practice*, *13*(2), 200-204.

Getachew, A., Ricca, J., Cantor, D., Rawlins, B., Rosen, H., Tekleberhan, A. B. L. G., Bartlett, L., & Gibson, H. (2011). Quality of care for prevention and management of common maternal and newborn complications: A study of Ethiopia's hospitals. *USAID*. Retrieved from https://www.healthynewborn network.org/hnn-content/uploads/Ethiopia_Qualtiy-of-Care-Assement-report_MCHIP_final-1.pdf.

Grove, S.K., Burns, N. & Gray, J.R. (2013). The practice of nursing research—Appraisal, synthesis, and generation of evidence. 7th Edition, Elsevier Saunders, St. Louis.

Hagos, A. A., Teka, E. C., & Degu, G. (2020). Utilization of Partograph and its associated factors among midwives working in public health institutions, Addis Ababa City Administration, Ethiopia, 2017. *BMC pregnancy and childbirth*, *20*, Article number 49.

Ingwu, J., Chukwukelu, A., Onasoga, O., & Onyiapat, J. (2018). Nurse-midwives Knowledge and Utilization of Partograph in Monitoring of Labour in Tertiary Hospitals in Enugu, South-Nigeria. *Sierra Leone Journal of Biomedical Research, 10*(1), 1-10.

Kitila, S. B., Gmariam, A., Molla, A., & Nemera, G. (2014). Utilization of partograph during labour and birth outcomes at Jimma University. *Journal of Pregnancy and Child Health*, *1*(101), 10-4172.

Kushwah, B., Singh, A. P., & Singh, S. (2013). The partograph: an essential yet underutilized tool. *Journal of Evolution of Medical and Dental Sciences*, *2*(24), 4373-4379.

Mathibe-neke, J., Lebeko, F., & Motupa, B. (2013). The Partograph: A labour management tool or a midwifery record? *international Journal of Nursing and Midwifery*; *5*(8), 145-153.

Mukisa, J., Grant, I., Magala, J., Ssemata, A.S., Lumala, P.Z., & Byamugisha J. (2019). Level of Partograph completion and healthcare workers' perspectives on its use in Mulago National Referral and teaching hospital, Kampala, Uganda. *BMC Health Services Research*, *19*, Article number 107.

Ogwang, S., Karyabakabo, Z., & Rutebemberwa, E. (2009). Assessment of partogram use during labour in rujumbura health Sub district, Rukungiri district, Uganda. *African Health Sciences*, *9*(S2), 27-34.

Oladapo, O. T., Daniel, O. J., & Olatunji, A. O. (2006). Knowledge and use of the partograph among healthcare personnel at the peripheral maternity centres in Nigeria. *Journal of Obstetrics and Gynaecology*, *26*(6), 538-541.

Opiah, M. M., Ofi, A. B., Essien, E. J., & Monjok, E. (2012). Knowledge and utilization of the partograph among midwives in the Niger Delta Region of Nigeria. *African Journal of Reproductive Health*, *16*(1), 125-132.

Polit, D., & Beck, C. (2012). *Nursing research: Generating and assessing evidence for nursing practice,* 9th edition, Philadelphia: Wolters Kluwer and LWW.

Qureshi, Z., Sekadde-Kigondu, C., & Mutiso, S. (2011). Rapid assessment of partograph utilisation in selected maternity units in Kenya. *East African Medical Journal*, *87*(6), 235-241.

Regasa, H., Tilahun, T., & Adem, H. (2018). Utilization of

partograph and associated factors among obstetric care givers in hospitals of Western Oromia, Ethiopia . *Panacea Journal of Medical Sciences*, *8*(1), 21-24.

Sama, C., Takah, N., Danwe, V., Melo, U., Dingana, T., & Angwafo, F. (2017). Knowledge and utilization of the partograph: A cross-sectional survey among obstetric care providers in urban referral public health institutions in Northwest and Southwest Cameroon. *PLoS ONE*; *12*(2), e0172860.

Singh, S., Singh, V., Thakur, T., Radhika, A. G., Mittal, P., Kashyap, J. A., Gupta, A., & Aggarwal, N. (2017). Influence of hospital policy on partograph use in tertiary care facilities in India: a cross sectional survey. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, *6*(11), 4891.

United Nations Population Fund (2017). Maternal health. United Nations Population Fund.

World Health Organization (WHO) (2015). Trends in Maternal Mortality: 1990 to 2015 Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division Executive Summary. ISBN 9789241565141.

World Health Organization (WHO) (2023). The Global Health Observatory: Explore a world of health data. https://www.who.int/data/gho/data/themes/topics/sdg-target-3-1-maternal-mortality

World Health Organization (WHO) (2014). WHO recommendations for augmentation of labor. Geneva. .https://scholar.google.com/scholar_lookup?title=WHO+recommendations+for+augmentation+of+labor&publication_year=2014&

Yisma, E., Dessalegn, B., Astatkie, A., & Fesseha, N. (2013). Completion of the modified World Health Organization (WHO) partograph during labour in public health institutions of Addis Ababa, Ethiopia. *Reproductive Health*, *10*, Article number 23.

Zelellw, D., & Tegegne, T. (2018). The use and perceived barriers of the partograph at public health institutions in East Gojjam Zone, Northwest Ethiopia. *Annals of Global Health*; *84*(1), 198-203.